7685

AUTINOR

Field Installation Manual
of Frequency drive

OP 15

for door gear AC / DC

Printed on recycle paper

WARNING

This manual is deemed correct on going to press. It is linked to the program version shown on the front page, however this version may evolve without influencing the contents of this manual, which may in itself be changed without prior warning.

The information contained has been scrupulously checked. However **AUTINOR** declines all responsibility for error or omission.

Should you notice any discrepancy or unclear description, or if you have any suggestions, we would appreciate your <u>written</u> comments (by mail or fax) to:

> Société **AUTINOR** - Service Documentation
> Z.A. Les Marlières
> 59710 AVELIN
> ☎   [33] 03-20-62-56-00
> 📠   [33] 03-20-62-56-41
> ✉   autinor@autinor.com

This manual is the property of AUTINOR, from whom it may be bought (at the above address). It may however by freely copied in order to communicate information to those who might need it.

We can only authorise a complete copy, without addition nor removal of information

Where quotations are taken, the following at least must be noted:

- the company name of **AUTINOR,**
- the program version to which it refers,
- the number and date of the original edition.

ELECTROMAGNETIC COMPATIBILITY

Since the 1st January 1996 all lift installations are obliged to respect the essential requirements of the European Directive 89/336/CEE concerning Electromagnetic Compatibility (EMC).

The **OP15** doors drive is only one component of an installation ; it is therefore not obliged to show the C € marking as stated in this directive. However in order to allow you to write your **declaration of conformity,** and according to professional rules, all **AUTINOR** controllers are supplied with an **engagement of** *conformity*.

Your declaration of conformity can only rest on this engagement,

if the OP15 doors drive has been installed exactly as advised in this manual.

PREAMBULE

Check list of the electric risk link to the installation of the VVVF door drive *OP15*:

<u>When the VVVF door drive is supplied on **230 VAC, TL, N** and $\perp$ 1:</u>

- The same voltage could be found on the opposite connector [X, **Y, Z** and $\perp$],

- The connector **K15** in case of Slow down contact [1] or incremental encoder [2] stay unisolated,

- The connectors **K3** and **K4** are isolated from the main supply,

- The connector **SUB-D 9** points reste également non isolé, but the **VEC03** box, give the requested isolation,

- In fact, in case of **P313** board using **(OP15 / P.C.** Interface), this give the requested isolation.

In any case, the **OV** [1] and **16V** [2] outputs of the connector **K5** couldn't be used for other supply as the incremental encoder or Slow down contact supply.

<u>Dimension, template and installation precausions:</u>

L = 80, H = 155, D = 85, Weight = 400 g
Fixation by 2 oblongs of 4,5 mm (screw not supplied)

---
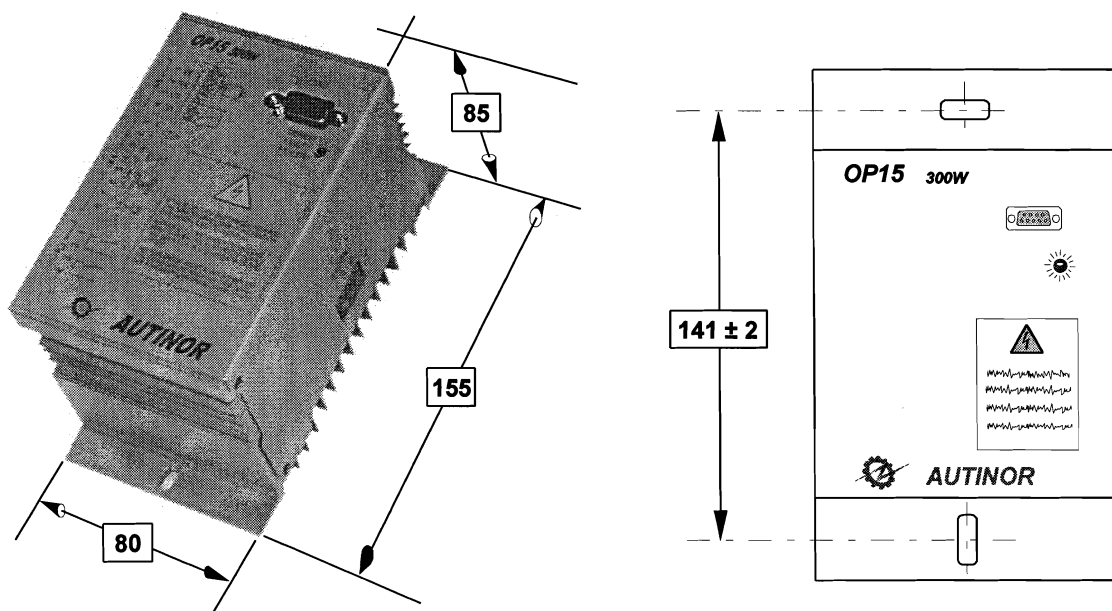
[1]   Slow down contacts: Specificity of the programme: **OP15 <u>R</u> xx**

[2]   Incremental encoder: Specificity of the programme: **OP15 <u>I</u> xx**

Installation precausions:

The mechanic link **incremental encoder / Motor / Leaves** must not show any slip.

THIS *LINK* MUST BE *LINEAR*

It is imperative to respect this type of link because it is the encoder which gives the door opening distance.

Link example:

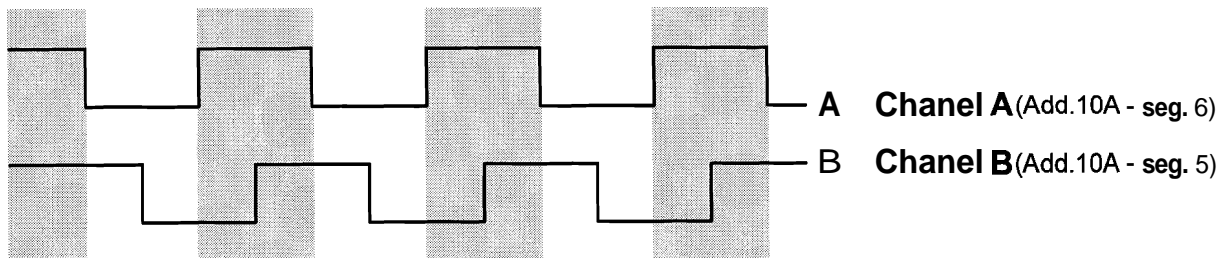Trainins:

- Belt-driven
  By endless screw
- By direct coupling of the leafs

Charateristics and principle of the incremental encoder working:

For the encoder, the signal A and B should be quadrature. They are transmitted to the following electronic box to be interpreated.

The output signals must respect the diagram below:

A   Chanel A (Add.10A - seg. 6)
B   Chanel B (Add.10A - seg. 5)

PRESENTATION OF THE VVVF DOOR CARD OP15.

The Electronic Door Control Unit **OP15** has been designed to control 3 Phase AC motor up to **0,3 kW,** and D.C. motor

Software:

- Programme Slow down contacts:........ **OP15 R 03 − 25/09/00**
- Programme Incremental Encoder: ..... **OP15 I 00 − 10/04/00**

The VVVF door drive only independently runs the slow down contact, due to the contact which are connected directly or to the incremental encoder.

The opening and closing command are given from the controller which receive directly the end limit contacts or by 'the intermediatly of the encoder which knows the exact position of the leaves.

OPERATION OF 3 PHASE AC MOTOR

The frequency **OP15** drive is supplied with a single phase voltage (230V AC) which is transformed into a Variable Voltage Variable Frequency Voltage.
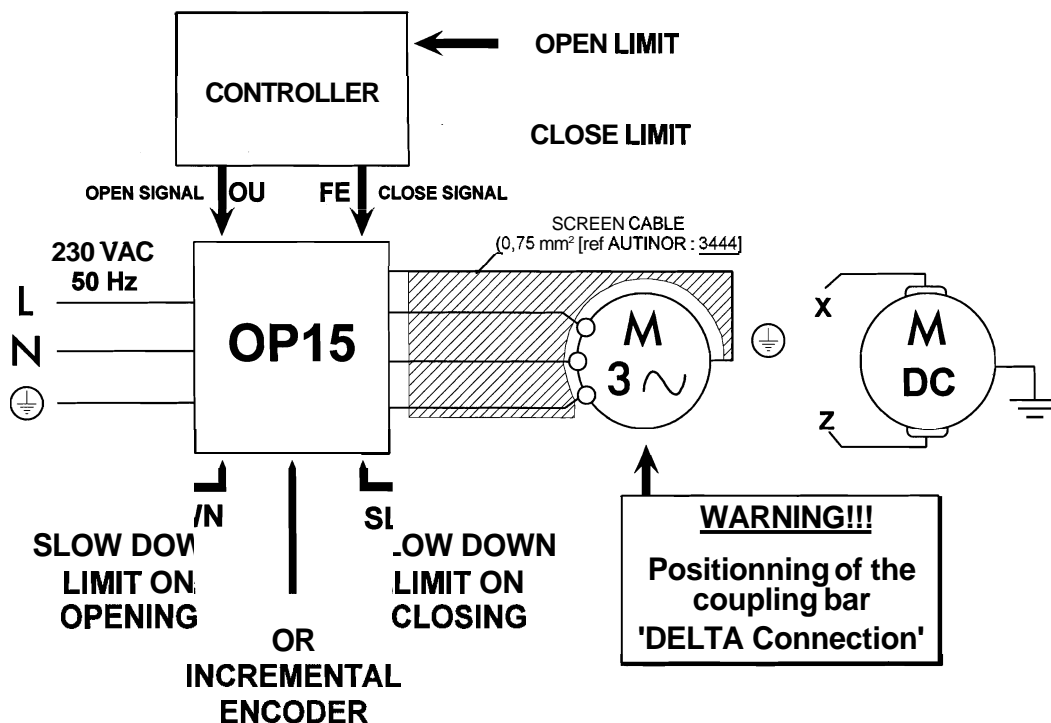
On receiving the order from the controller to open the doors, the V.V.V.F. drive unit controls the acceleration path of the motor up to a preset value.

The deceleration starts when the doors reach the slow down limit on opening **OR** when the slow down distance is detected by the encoder.

When the controller gives the stopping signal, the drive will stop the motor.

The operation on closing sequence follows the above, the deceleration starts when the doors reach the slow down limit on closing **OR** when the slow down distance is detected by the encoder.

CONNECTION DIAGRAM OF ELECTRONIC BOX.
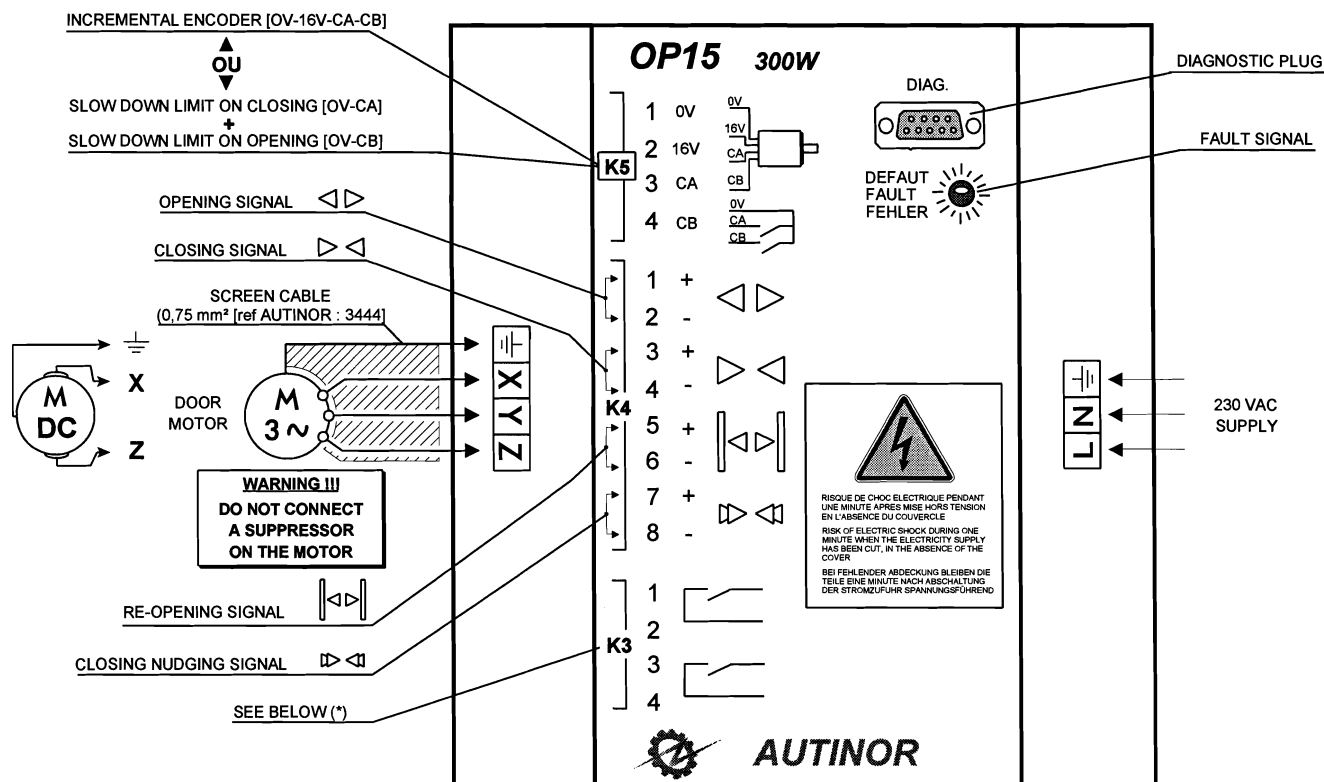
The Open signal should be connected to Terminal connector K4 on **–** [2] and **+** [1]. (24V ~ or =)

The Close signal should be connected to Terminal connector K4 on **–** [4] and **+** [3]. (24V ~ or =)

The re-opening signal should be connected to Terminal connector K4 on **–** [6] and **+** [5]. (24V ~ or =)

The Fire Service signal to do the Set-up speed on closing should be connected to Terminal K4 on **–** [8] and **+** [7]. (24V ~ or =).

(*) For the Slow limit contacts: 2 choices:

A Slow down limit on **opening** which is connected to K5 on OV [1] and CB [4].

A Slow down limit on **closing** which is connected to K5 on OV [1] and CA [3].

And a relay which **give** the **re-opening**, to K3 between [1] and [2].

The box give equally 1 contact (NO) available on the terminal K3.

Programme:

OP15 R xx

OR

An **Incremental Encoder** mounted on the door motor which is connected to K5 on OV [1], 16V [2], CA [3] and CB [4].

The OP15 deliver to the controller a simulation of the:

   OPening End Limit contact (**ELOP** [FCOU]) between [1] and [2] to the K3 terminal,

• And **CLosing** End Limit contact (**ELCL** [FCFE]) between [3] and [4] to the K3 terminal.

Programme:

OP15 I xx

      NOTE:

    • The VVVF / Motor link should be made with a SCREEN **CABLE** and as short as possible.
      (The screen cable is not delivered but available as a spare part [ref AUTINOR: 3444])

IMPERATIVE

Separate the conductors carrying large current and those carrying electric information at low current.

Opening and closing cycle.

Opening cycle (Programme   l   OP15 R 03 – 25/09/00)

When the opening command is given to the VVVF control card, the opening cycle starts by a small pre-acceleration **Acc2** (address 009) which allows the smooth unlocking of the *lock beak* (sabres). The motor will continue to accelerate **ACC1** (address 008) until the opening maximum speed FMAXOP (address 000) is reached.
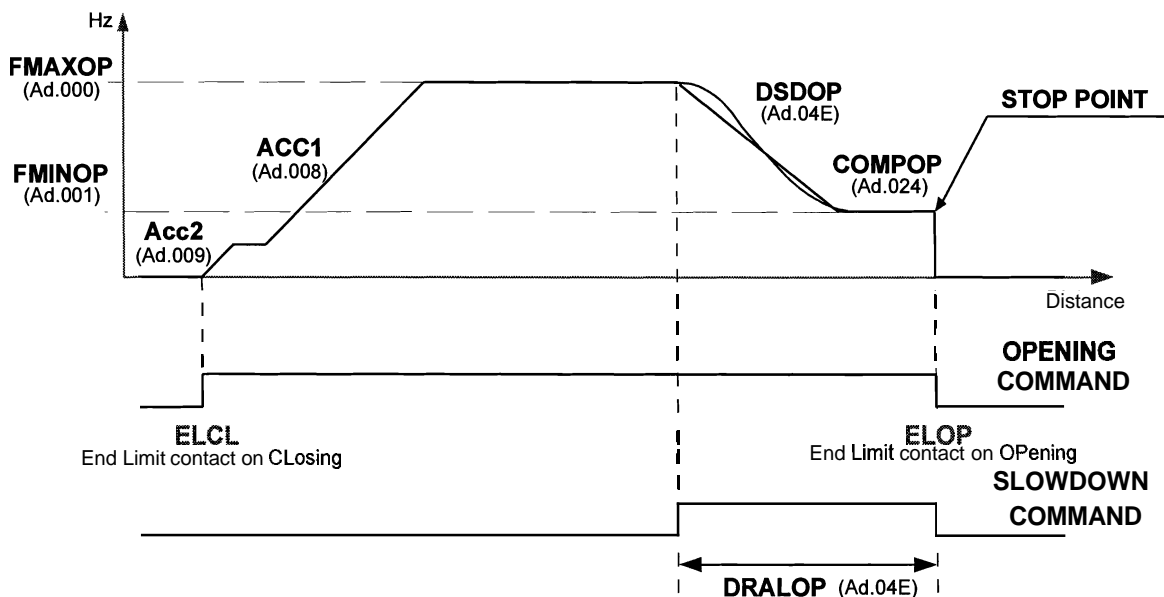
The deceleration DECEL (address 00A) starts when the door reaches the slow down limit contact up to the speed limit on opening FMINOP (address 001). The Stop is given when the door reaches the opening limit contact.
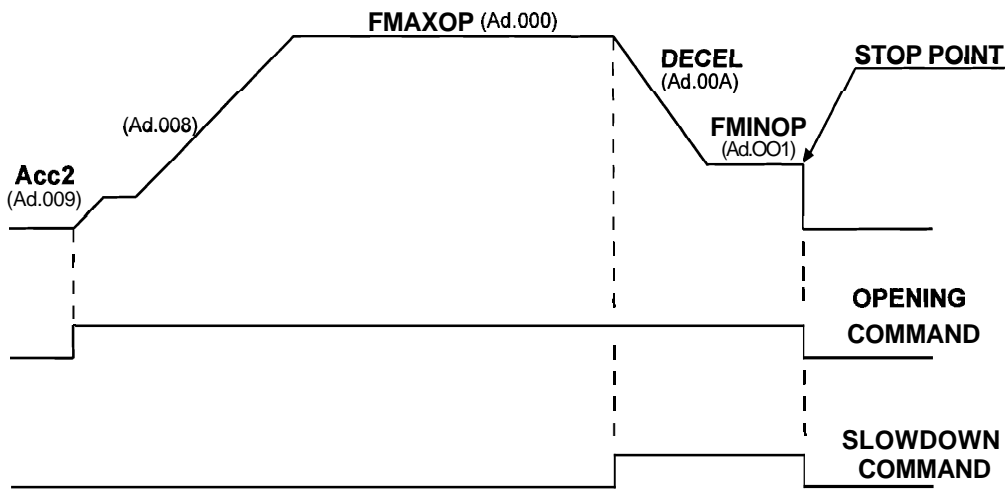
Opening cycle (Programme version OP15 I 00 – 10/04/00)

When the opening command is given to the VVVF control card, the opening cycle starts by a small pre-acceleration **Acc2** (address 009) which allows the smooth unlocking of the *lock beak* (sabres). The motor will continue to accelerate **ACC1** (address 008) and stabilise itself when the opening maximum speed FMAXOP (address 000) is reached.
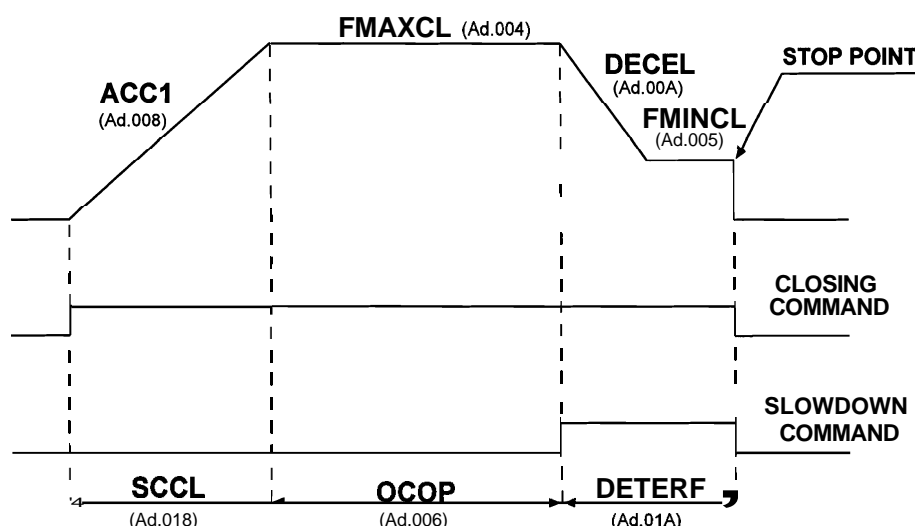
The opening slow down distance DSDOP (address 04E) starts when the encoder information is in receipt of the OP15 until the opening minimum speed FMINOP (address 001). The stop is given when the door reaches the opening limit contact.

Closing cycle (Programme version OP15 R 03 − 25/09/00)

When the opening command is given to the VVVF control card, the opening cycle starts by an acceleration **ACC1** (address **008)** until the maximum closing speed **FMAXCL** (address **004)** is reached.

The deceleration **DECEL** (address **00A)** starts when the door reaches the slow down closing contact until the minimum closing speed **FMINCL** (address **005).** The Stop is given when the door reaches the closing limit contact.

Closing cycle (Programme version OP15 I 00 − 10/04/00)

When the closing command is given to the VVVF control card, the opening cycle starts by a acceleration **ACC1** (address **008)** and stabilise itself when the closing maximum speed **FMAXCL** (address **004)** is reached.

The closing slow down distance **DSDCL** (address **04C)** starts when the information of the encoder is in receipt of the **OP15** until the closing minimum speed **FMINCL** (address **005).** The stop is given when the door reaches the closing limit contact.
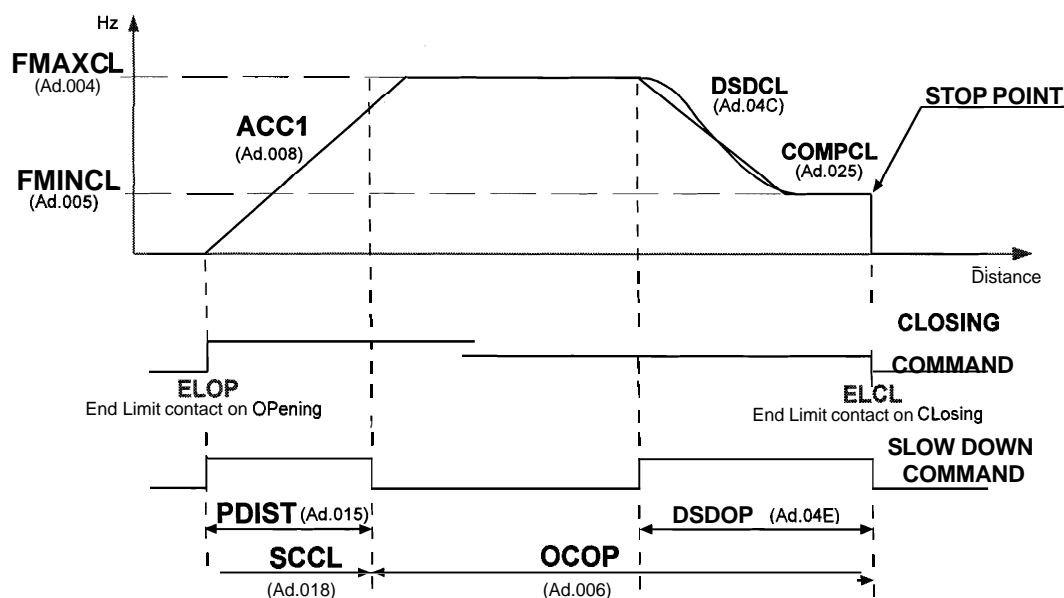
HOW TO USE THE COMMUNICATION / DIAGNOSTIC TOOL

This chapter contains information which will allow you to adapt the VVVF Door Drive to the specific conditions of the lift on which it is installed.
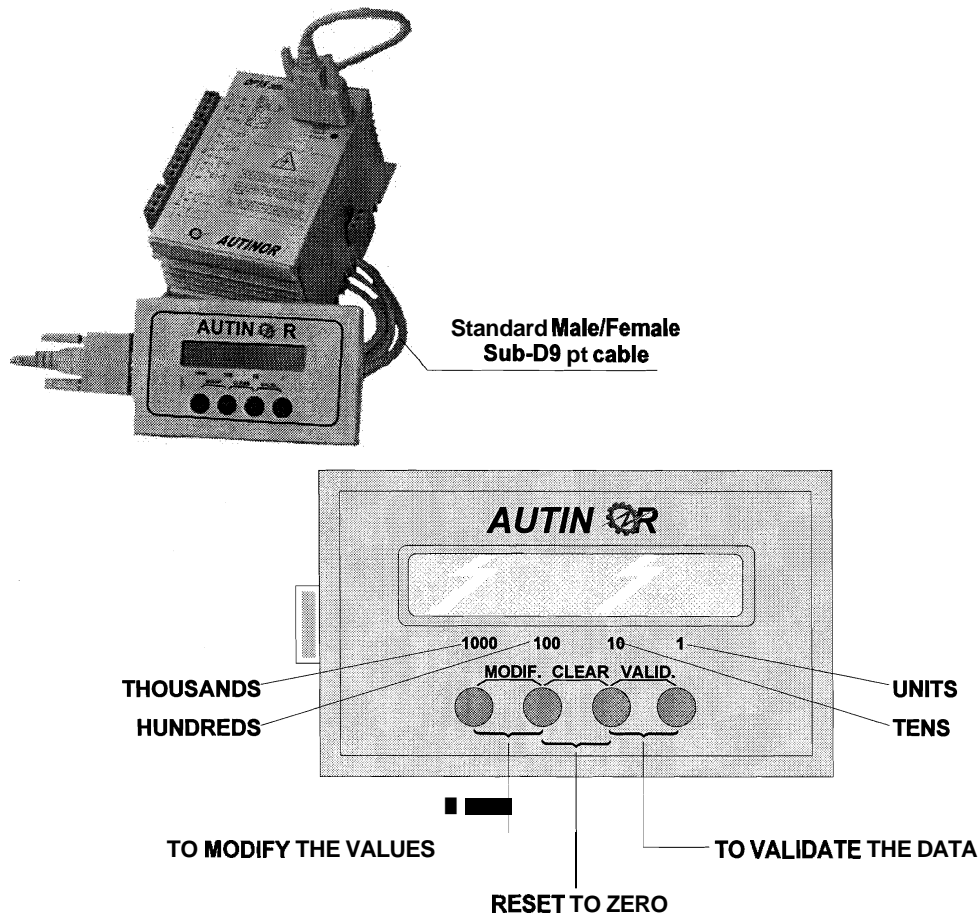
This adaptation is controlled by **parameters,** which you can modify according to your needs using the removable parameter / diagnostic communication device as described below in the paragraph ACCESSING THE PARAMETERS.

The parameters are memorized in a particular type of chip called an EEPROM[3] (or E2PROM) which **keeps the information even when the equipment is switched off.**

Each parameter is linked to an **abridged name** and an **address** which corresponds to the position at which it is memorized in the EEPROM chip.

ACCESSING THE PARAMETERS

As mentionned above, you can see and modify the parameters using the parameter/diagnostic communication tool ; this consists of a 16 character LCD display with four push buttons, which is connected to the **OP15** box by a standard Male/Female Sub-D 9 pt cable.

Standard Male/Female
Sub-D9 pt cable

AUTIN ⓡR

THOUSANDS
HUNDREDS
UNITS
TENS

MODIF. CLEAR VALID.
1000   100   10   1

TO MODIFY THE VALUES   TO VALIDATE THE DATA

RESET TO ZERO

---

[3]   *EEPROM* stands for *Electrically Erasable Programable Read Only Memory.*

To access the parameters and I/O   rmati

Power-up the equipment, the display shows:

```
OP15I ....          ..../..../....
```
OR
```
OP15R ....          ..../..../....
       1000   100    10     1
       MODIF.  CLEAR  VALID.
       ( )    ( )    ( )    ( )
```

THEN ⟹

```
000
        FMAXOP    050 Hz

   1000ODIF100CLEAR10VALID.1
   ( )    ( )    ( )    ( )
```
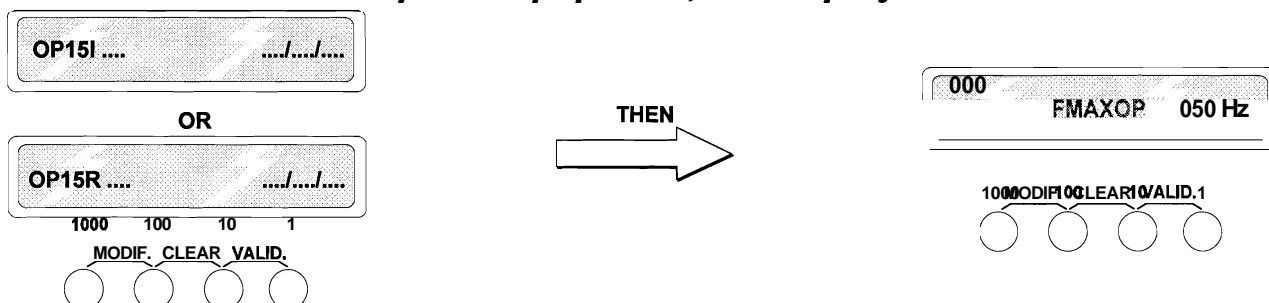
Each time you press **1** the value shown will increase by **1.**

Each time you press **10** the value shown will increase by **10.**

Each time you press **100** the value shown will increase by **100.**

Each time you press **1000** the value shown will increase by **1000.**

Choosinçi the language
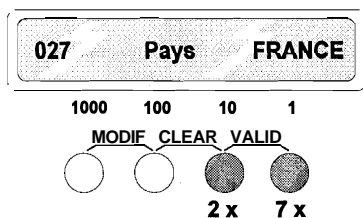
The parameter/diagnostic communication device is preset to the language of the destination « Pays ».
There are four options which appear at address **027** as follows:

FRANCE, ENGLISH, DEUTSCH*, ESPAGNOL*. (* Not available at the moment)

Press twice button **10**, then 7 times button **1**, for address **027**

```
027      Pays      FRANCE
1000    100    10     1
MODIF   CLEAR  VALID
( )    ( )    (●)    (●)
              2 x    7 x
```

Press both **MODIF** buttons at the same time.

```
MDF      Pays      FRANCE
1000    100    10     1
MODIF   CLEAR  VALID
(●)    (●)    ( )    ( )
```
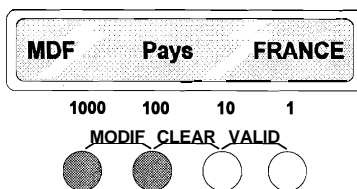
Press button **1** and choose the required language.

```
MDF      Pays      ENGLISH
1000    100    10     1
MODIF   CLEAR  VALID
( )    ( )    ( )    (●)
```
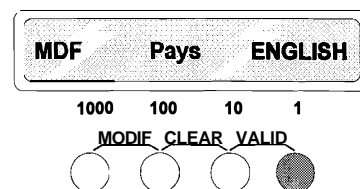
Register the required language by pressing both **VALID** buttons at the same time

```
027      Pays      ENGLISH
1000    100    10     1
MODIF.  CLEAR  VALID.
( )    ( )    (●)    (●)
```
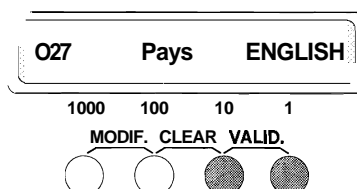
The language in our example is **English**

Transfer of the settings included in the VVVF toward the diagnostic tool.

Press the 2 end buttons to make
« READ PARAMETERS »
appear.
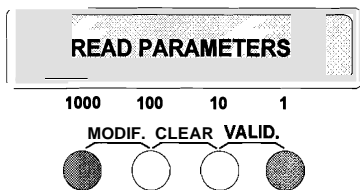
Validate by pressing the
« VALID » buttons
..... Transfer

Press the 2 end buttons
to return to normal mode

READ PARAMETERS	READ Adr. F8xx	000 FMAXOP 050 Hz
1000 100 10 1	1000 100 10 1	1000 100 10 1
MODIF. CLEAR VALID.	MODIF. CLEAR VALID.	MODIF. CLEAR VALID.

Note: You can memorise in the E^2ROM of the box, the parameters of **4** VVVF door drive, respectively at the addresses **00, 40, 80** or **CO.** Fo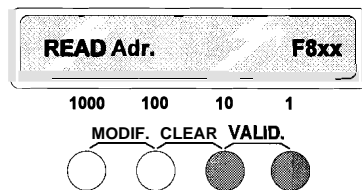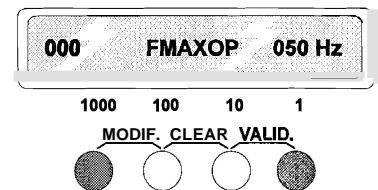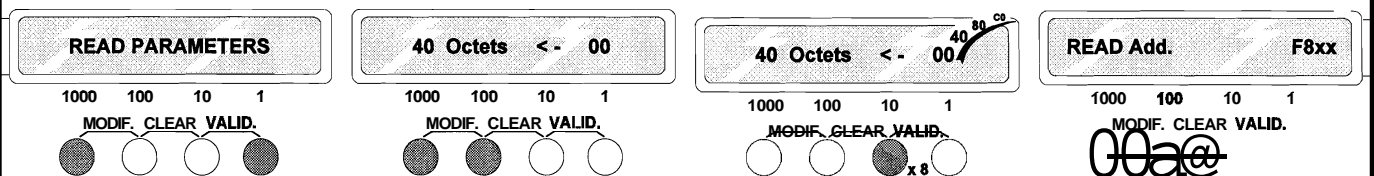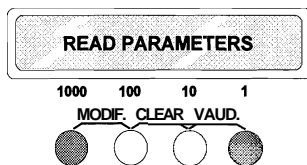r that, press the 2 end buttons than press « MODIF » button and modify the right number to **00, 40, 80** or **CO** with the 10 button than press « VALID » to validate.

READ PARAMETERS	40 Octets <- 00	40 Octets <- 00	READ Add. F8xx
1000 100 10 1	1000 100 10 1	1000 100 10 1	1000 100 10 1
MODIF. CLEAR VALID.	MODIF. CLEAR VALID.	MODIF. CLEAR VALID.	MODIF. CLEAR VALID.

Ex: Copy the VVVF parameters at
address **80** in the box

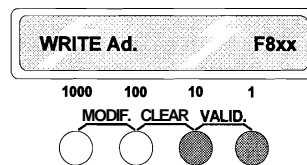## Tran   of the settings included in the diagnostic tool toward the V\

Press the 2 end buttons,
you read,
« READ PARAMETERS »

Display
« WRITE PARAMETERS »
using button 1
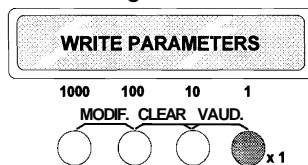
Validate by *pressing* the
« VALID » button
..... Transfer

Press the 2 end buttons to
return to normal mode

READ PARAMETERS	WRITE PARAMETERS	WRITE Ad. F8xx	000 FMAXOP 050 Hz
1000 100 10 1	1000 100 10 1	1000 100 10 1	1000 100 10 1
MODIF. CLEAR VAUD.	MODIF. CLEAR VAUD.	MODIF. CLEAR VALID.	MODIF. CLEAR VALID.
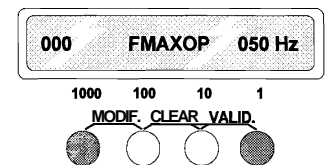
⚠️ ***WARNING:*** ⚠️
this operation *overwrite* on the paratneters *included* in the *VVVF door* drive

Note: You can transmit the VVVF parameters in the E^2ROM of the box at addresses **00, 40, 80** or **CO** in the box VEC03. For that, press the 2 end buttons, than on the button 1, to pass on « WRITE » mode than modify the right number at **00, 40, 80** or **CO** with the 10 button than press « VALID » to validate.

READ PARAMETERS	WRITE PARAMETER	40 Oct ts 00	40 Octets -> 00	READ Add. F8xx
MODIF. CLEAR VALID.	MODIF. CLEAR VALID.	1000 100 10 1	1000 100 10 1	IWO 100 10 1
		MODIF. CLEAR VALID		MOMF. CLEAR VALID.
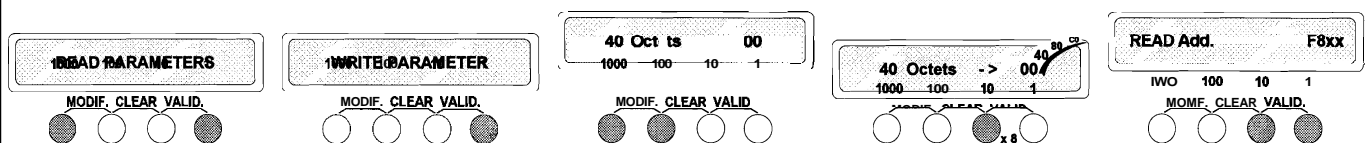
Ex: Copy the Parameters
memorised at address
80 in the box to the
VVVF

To remind yourself of the address

If you forget the address you are changing, or the previous value shown, just press both MODIF buttons

004   FMAXCL   040 Hz
1000   100   10   1
MODIF. CLEAR VALID.
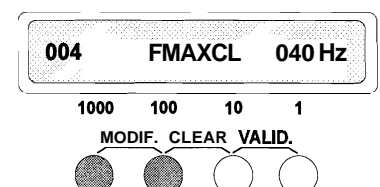
To change the parameter in "decimal mode"

After selecting the required language (see previous page) you can access the parameters and change them if required.

Reset the display by pressing both **CLEAR** buttons at the same time

| 000 | FMAXOP | 050 Hz |

1000   100   10   1
MODIF. CLEAR VALID.
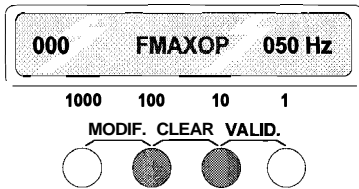
To change the Opening current **MCO**, display address **002** by pressing button **1**

| 002 | MCO | 500 mA |

1000   100   10   1
MODIF. CLEAR VALID.

2 x

Press both **MODIF** buttons at the same time

| MDF | MCO | 500 mA |

1000   100   10   1
MODIF. CLEAR VALID.

Press button **100** one time to obtain the desired current.
Ex.: 600 mA

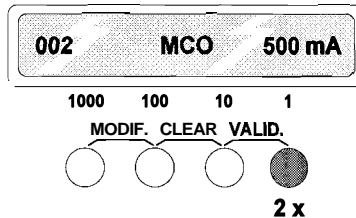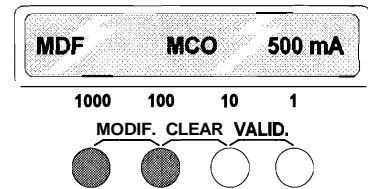| MDF | MCO | 600 mA |

1000   100   10   1
MODIF. CLEAR VALID.

1 x
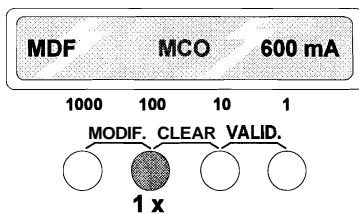
Register the new current by pressing both **VALID** button at the same time

| 002 | MCO | 600 mA |

1000   100   10   1
MODIF. CLEAR VALID.
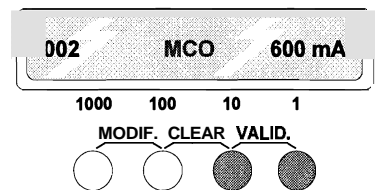
To change the parameters in "segment mode"

ISDOP   IRELOP

| 00D | INV | 00000000 |

ISDCL   IRELCL

Reset the display by pressing both **CLEAR** buttons at the same time

| 000 | FMAXOP | 50 Hz |

1000   100   10   1
MODIF. CLEAR VALID.
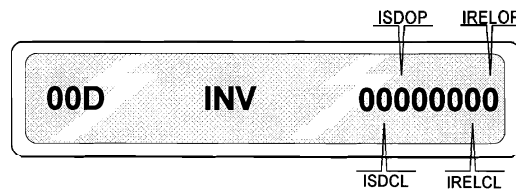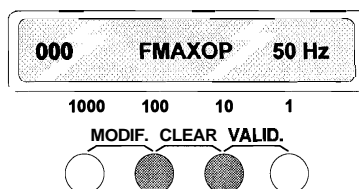
Display address **00D** by pressing button **1**

| 00D | INV | 00000000 |

1000   100   10   1
MODIF. CLEAR VALID.

11 x

Press both **MODIF** buttons at the same time

| MDF | Bt0 | IRELOP 0 |

1000   100   10   1
MODIF. CLEAR VALID.
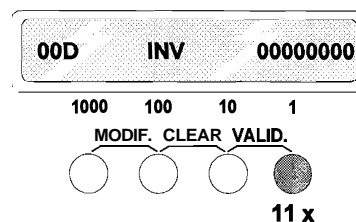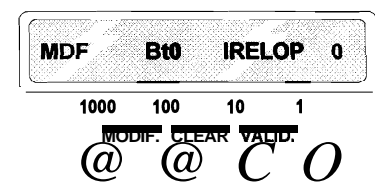
Press button **10** to obtain the required segment.
Example: **Inversion of the slow down opening contact.**

| MDF | Bt5 | ISDOP 0 |

1000   100   10   1
MODIF. CLEAR VALID.

5 x
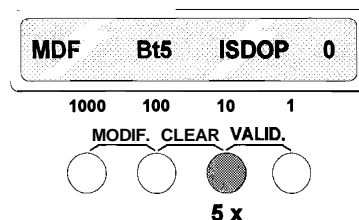
Press button **1** to activate the segment **5.**

| MDF | Bt5 | ISDOP 1 |

1000   100   10   1
MODIF. CLEAR VALID.

1 x
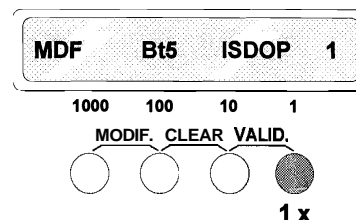
Register the new data in the memory by pressing both **VALID** buttons at the same time.

| 00D | INV | 00100000 |

1000   100   10   1
MODIF. CLEAR VALID.
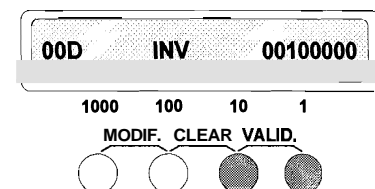
⇨ **segment 5 passes to 1**

DESCRIPTION OF PARAMETERS (1/7)

WARNING: ALL REMAINING OF PARAMETER SHOULD BE MADE **WITHOUT** DOOR COMMAND

- Address **000** : **FMAXOP**. Frequency MAXimum on OPening   in Hz or V

We program the Maximum frequency on opening adjustable between 001 Hz to 080 Hz. (**001** V to 240 V in case of D.C. motor)

(See diagram OPENING CYCLE on page 7).

- Address **001** : **FMINOP**. Frequency MINimum on OPening   in Hz or V

We program the Minimum frequency on opening adjustable between 001 Hz to 020 Hz. (001 V to 100 V in case of D.C. motor)

(See diagram OPENING CYCLE on page 7).

- Address **002** : **MCO**. Maximum Current on Opening   in mA

We program the maximum current on opening [in mA].

This is the maximum current allowable on opening. This could be visualised at the address 12A (I_Cap1). To this current reading, we added a percent (10 to 20%) and transmit it to the address 002. If the current exceeds the programmed value, a fault code 02 will be generate. It will clear after a set time.

Address **004** : **FMAXCL**. Frequency MAXimum on CLosing   in Hz or V

We program the maximum frequency on closing adjustable between **001** Hz to 080 Hz. (001 V to 240 V in case of D.C. motor)

(See diagram CLOSING CYCLE on page 8).

- Address **005** : **FMINCL**. Frequency MINimum on Closing   in Hz or V

We program the maximum frequency on closing adjustable between 001 Hz to 020 Hz. (001 V to **100** V in case of D.C. motor)

(See diagram CLOSING CYCLE on page 8).

- Address **006** : **OCOP**. Over-Current on re-OPening   in mA

We program the value of the over-current on re-opening [in mA].

This is the maximum current allowable on closing. This could be visualised at the address 12A (**I_Cap1**). To this current reading, we added a percent (10 to 20%) and transmit it to the address 006. If the current exceeds the programmed value, a re-opening will be excuted.

DESCRIPTION OF PARAMETERS (2/7)

- Address **008** : **ACC1**. ACCeleration **on** Opening and Closing   in 1/10 second

---

We program the acceleretion on opening and closing (**Decimal** value in 1/10 s).

Write ▶	**1.0**	**0.7**	**1.0**
If the frequency used ▶	50 Hz	70 Hz	40 Hz
The Acceleration will be ▶	**1 s**	**1 s**	**0.8 s**

The acceleration is made on incrementation of the frequency (step **0.5** Hz every 10ms), than if the increment of acceleration equals 02, the starting frequency equals **0** Hz and the frequency to reaches equals **50** Hz.

- Address **009** : **Acc2**. ACCeleration on pre-opening   in 1/10 second

---

We program the acceleration on pre-opening (Set-up speed).

The pre-opening has the function of permitting the progressive action of unlocking system. The pre-opening acceleration is made by incrementing the frequency to **0.5** Hz every 10ms, it substitutes itself at the acceleration during the begining of the door opening **ACC1** to permit a progressive action on the unlocking system. It is not used if the minimum frequency on opening **FMINOP** (page 13) is reached or if the closing slow down contact is made again, in this case, we are using the acceleration **ACC1**.

- Address **00A** : **DECEL**. DECELeration   in 1/10 second

We program the DECELeration on opening et closing (**Decimal** value in 1/10 s).

The acceleration is made on incrementation of the frequency (step **0.5** Hz every 10ms), than if the increment of acceleration equals 02, the starting frequency equals **0** Hz and the frequency to reaches equals **50** Hz.

The deceleration is made on decreasing the frequency (step **0.5** Hz every 10ms), than if the increment of deceleration egal 02, the starting frequency equals **50** Hz and the frequency to reaches equal **0** Hz.

Write ▶	**1.0**	**0.7**	**1.0**
If the frequency used ▶	50 Hz	70 Hz	40 Hz
The Deceleration will be ▶	**1 s**	**1 s**	**0.8 s**

- Address **00B** : **F INH**. Frequency INHibition   in Hz or V

We program the forced closing speed in nudging. It's the set-up speed adjustable between **001** Hz to **020** Hz. (**001 V** to **100** V in case of D.C. motor)

When the fireman function is activated, the safety knuckle contact or door re-open button and the photocell contact are inhibited, that's why the closing is made on set-up speed.

DESCRIPTION OF PARAMETERS (3/7)

- Address **00C** : **MID**. Maximum Integrator Duration   in second

We program the maximum duration door integrator

MID mini	MID maxi	**WARNING:**
010 s	120 s	If MID = 000, NO INTEGRATOR

It is the maximum duration on opening or closing command.

If the programmed value is too high, the fault **22** appaers. (see page **21**)

- Address **00D** : **INV** Inversion

[ONLY WITH THE PROGRAMME OP15 R XX]

Bits **2, 3, 4, 7** : Not used   `00D INV 00000000`

Bit **6** : **ISDCL** Inversion Slow Down Contact on Closing   `00D INV 01000000`

Indicate the state of the slow down contact on closing.
The bit is at **1** when the contact is a NC contact.
The bit is at **0** when the contact is a NO contact.

Bit **5** : **ISDOP** Inversion Slow Down contact on Opening   `00D INV 00100000`

Indicate the state of the slow down contact on opening.
The bit is at **1** when the contact is a NC contact.
The bit is at **0** when the contact is a NO contact.

Bit **1** : **IRELCL** inversion Relay End Limit on CLosing   `00D INV 00000010`

Indicate the state of the end limit contact on closing.
The bit is at **1**, the relay does paste.
The bit is at **0**, the relay doesn't paste.

Bit **0** : **IRELOP** Inversion Relay End Limit on Opening   `00D INV 00000001`

Indicate the state of the end limit contact on opening.
The bit is at **1**, the relay does paste.
The bit is at **0**, the relay doesn't paste.

- Address **00F** : **AUTOTC**. AUTOmatique Time Cycle   in second

We program the Automatic time to make a cycle including opening / closing / Stop time (⇨Factory Specificity **(DEPARTMENT R&D)**)

- Address **011** : **TPT**. Transistor Pause Time   in µs

Factory adjustment (value in µs), it's the 'Transistor pause time' (« temps mort ») of commuting between the upper I.G.B.T and lowest I.G.B.T **(4 ps)**.

DESCRIPTION OF PARAMETERS (4/7)

- Address **013** : **TT**, Torque applied to the door motor   without unit

We program the torque applied to the motor on opening an d closing.

The value is adjustable between 00 (smallest) and 30 (highest).

- Address **014** : **Opt**, Option   without unit

Bits **0**, **1**, **2**, **3**, **4**, **6** : Not Used

> 014 Opt **00000000**

Bit **7** : **DC MOT**. D.C. MOTor

> MDF Bt 7 **DC MOT 0**

Indicate the state motor supply AC or DC
The bit is at 1 when the OP15 drive DC motor.
The bit is at 0 when the OP15 drive AC motor.

NOTE : when the bit 7 = 1, all the values visualised in Hz are now in V (Volts).

Bit **5** : **RESMOT**. RESistive MOTor

> MDF Bt 5 **RESMOT 0**

This bit authorise the increasing of the torque and the voltage applied at lowest Frequency.
The maximum value of the TT parameter (Ad. 013 - page 16) will be now 40.
The bit is at 1 when the fonction is require.
The bit is at 0 otherwise.

- Address **015** : **PDIST**, Percent of DIStance   in %

[ONLY WITH THE PROGRAMME OP15 I XX]

We program the percent of distance on accordance of the parameter **SCCL** (Ad. 018 – page 16)

- Address **018** : **SCCL**, Start Current of CLosing   in mA

We program the start current of closing (Full opening to Slow-down contact on opening).
Value max. 800 mA.

- Address **01A** : **DETERF**, DETection re-opening between Slow Down and Closing   in mA

[ONLY WITH THE PROGRAMME OP15 R XX]

We program the re-opening detection between the Slow-down limit contact on closing an the full closing. Value max. 800 mA.

- Address **01F** : **CRESER**, Current RESERves   in mA

[ONLY WITH THE PROGRAMME OP15 I XX]

We program the reserves of current added at **OCOP** (Add. 006 – page 13) corresponding at the variation current admissible for each door on floor (depend on the friction)

DESCRIPTION OF PARAMETERS (5/7)

• Address 020 : DIST, Distance   in %

[ONLY WITH THE PROGRAMME OP15 I XX]

We program the door opening distance, it's the top number of the encoder to open the door.

• Address 024 : COMPOP, COMPensation on OPening   in %

[ONLY WITH THE PROGRAMME OP15 I XX]

We program the compensation on <u>opening</u> movement allowed to correct the deceleration in case of " Door shocks "

• Address 025 : COMPCL, COMPensation on CLosing   in %

[ONLY WITH THE PROGRAMME OP15 I XX]

We program the compensation on <u>closing</u> movement allowed to correct the deceleration in case of " Door shocks "

• Address 027 : Pays, Language.

At this address can be programmed the language to be used on the VEC03 programming tool.

Possible Choice: France, English*, Deutsch*, Español * (*Not available at the moment)

• Address 028 to 031 : PileDef, Fault List

At this address can be read the next 10 faults memorised by the VVVF door drive.

At the address **028** we found the last fault and at the address **032** the oldest fault registered.

> <u>BEFORE LEAVING THE SITE, SET THE FAULT LIST BACK TO 00.</u> **IN THIS WAY YOU CAN KEEP BETTER TRACK OF ANY BREAKDOWNS.**

• Address 034 : NST, Number of STarts. => 0 0 0 0 0 0 0 0

At this address, can be read the number of starts carried out by the VVVF Door drive on opening or closing movement.

DESCRIPTION OF PARAMETERS (6/7)

• Address **042** : **REG**

[ONLY WITH THE PROGRAMME OP15 I XX]

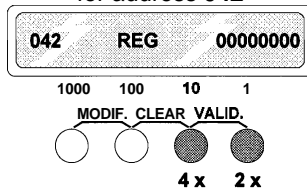Bits **0**, **1**, **2**, **3**, **4**, **5**, **6** : Not used   `042REG00000000`

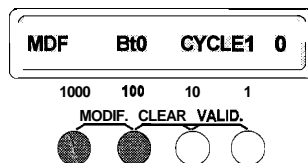Bit **7** : **REGLE** Automatic set-up of the door   `042REG10000000`

Process: Switch the **7** at **1** then VALID.

The operator is on automatic set-up, it make the differents cycles, on closing and opening, the bits Q, 1, 2, 3, **4,** 5 pass on the state 0 to 1 then the whole bits are reset at 0.

Press 4 times button **10** and 2 times button **1** for address **042**

| 042 | REG | 00000000 |

1000 100 10 1
MODIF. CLEAR VALID.
○ ○ ● ●
4 x   2 x

Press both **MODIF** buttons at the same time

| MDF | Bt0 | CYCLE1 | 0 |

1000 100 10 1
MODIF. CLEAR VALID.
● ● ○ ○

Press **7** times button **10** to display **REGLE** then **1** time on **1**

| MDF | Bt7 | REGLE | 0 |

1000 100 10 1
MODIF. CLEAR
○ ○ ■ ●
7 x ᴛʜᴇɴ 1 x
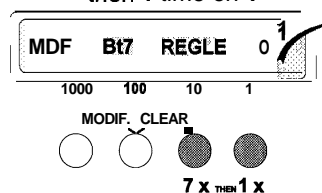
The process start when **MODIF** buttons are press at the same time

| MDF | Bt7 | REGLE | 1 |

1000 100 10 1
MODIF. CLEAR VALID.
○ ○ ● ●
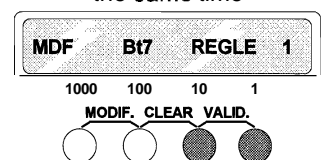
• Address **044** : **MAXOP**, frequency MAXimum on OPening   in 1110 Hz

---

[ONLY WITH THE PROGRAMME OP15 I XX]

[ATTENTION, THIS PARAMETER REPLACE THE PARAMETER 000 IF 044 ≠ 00,00H]

We program the maximum frequency on opening in 1/10 of Hz.

• Address **046** : **MINOP**, frequency MINimum on OPening   in 1/10 Hz

---

[ONLY WITH THE PROGRAMME OP15 I XX]

[ATTENTION, THIS PARAMETER REPLACE THE PARAMETER 001]

We program the minimum frequency on opening in 1/10 of Hz.

• Address **047** : **FINH**, Nudging Closing Forced   in 1110 Hz

---

[ONLY WITH THE PROGRAMME OP15 I XX]

[ATTENTION, THIS PARAMETER REPLACE THE PARAMETER 00B]

We program the forced closing speed in nudging. It's the set-up speed adjustable between **001** Hz to **020** Hz.

When the fireman function is activated, the safety knuckle contact or door re-open button and the photocell contact are inhibited, that's why the closing is made on set-up speed.

DESCRIPTION OF PARAMETERS (7/7)

- Address **048** : **MAXCL**, frequency MAXimum on CLosing   in 1/10 Hz

> [ONLY WITH THE PROGRAMME OP15 I XX]
>
> [ATTENTION, THIS PARAMETER REPLACE THE PARAMETER 004]

We program the maximum frequency on closing movement in 1/10 of Hz.

- Address **04A** : **MINCL**, frequency MINimum on CLosing   in 1/10 Hz

> [ONLY WITH THE PROGRAMME OP15 I XX]
>
> [ATTENTION, THIS PARAMETER REPLACE THE PARAMETER 005]

We program the minimum frequency on closing movement in 1/10 de Hz.

- Address **04C** : **DSDCL**, Distance of Slow Down on CLosing   in nb.Imp Encoder

> [ONLY WITH THE PROGRAMME OP15 I XX]

We program the slow down distance on closing.

Address **04E** : **DSDOP**, Distance of Slow Down on OPening   in nb.Imp Encoder

> [ONLY WITH THE PROGRAMME OP15 I XX]

We program the slow down distance on opening.

PARAMETERS TABLE AND FACTORY VALUES

ADDRESS				Factory values		Finals Values		Page
				AC	DC	AC	DC	
000	000 FMAXOP 000	R	I	050 Hz	... V MOTOR SPECIFICATIONS			13
001	001 FMINOP 000	R	I	010 Hz	... V MOTOR SPECIFICATIONS			13
002	002 MCO 000	R	I	0500 mA				13
004	004 FMAXCL 000	R	I	040 Hz	... V MOTOR SPECIFICATIONS			13
005	005 FMINCL 000	R	I	010 Hz	... V MOTOR SPECIFICATIONS			13
006	006 OCOP 0000	R	I	0400 mA				13
008	006 ACC1 00.0	R	I	01.0 S				14
009	009 Acc2 00.0	R	I	02.0 S				14
00A	00A DECEL 00.0	R		02.0 S				14
00B	00B F INH 000	R	I	015 Hz	... V MOTOR SPECIFICATIONS			14
00C	00C MID 000	R	I	030 S				15
00D	00D INV 00000000	R		0 0 0 0 0 0 0 0				15
011	011 TPT 00.0	R	I	04.0 µS				15
013	013 TT 000	R	I	000				16
014	014 Opt 00000000	R	I	0 0 0 0 0 0 0 0				16
015	015 PDIST 000		I					16

R = Slow down contacts (programme OP15 R 03 − 25/09/00)   **I = Incremental** (OP 5 I 00 − 10/04/00)

ADDRESS			Factor Values AC	Factor Values DC	Finals Values AC	Finals Values DC	Page
018	018 SCCL **0000**	R	I	0500 **mA**				16
01A	01A DETERF **0000**	R	I	0500 **mA**				16
01F	01F CRESER **0000**		I					16
020	020 DIST **0000**		I					17
024	024 COMPOP **0000**		I					17
025	025 COMPCL **0000**		I					17
027	027 Pays **FRANCE**	R	I	FRANCE				17
034	034 NST **00000000**	R	I	0 0 0 0 0 0 0 0				17
042	042 REG **00000000**		I	0 0 0 0 0 0 0 0				18
044	044 MAXOP **0000**		I					18
046	046 MINOP **0000**		I					18
047	047 FINH **0000**		I					18
048	048 MAXCL **0000**		I					19
04A	04A MINCL **0000**		I					19
04C	04C DSDCL **0000**	R	I					**19**
04E	04E DSDOP **0000**	R	I					19

R = Slow down contacts (programme OP15 R 03 − 25/09/00)   I = Incremental (OP 15 I 00 − 10/04/00)

DEFINITION OF THE VARIABLES (1/3)

EXPLICANATION OF THE INPUTS:

- Address **100** : **Inp**, Bits 0 to 7.

| Bits **4**, **5**, **6**, **7** : Not used | 100 Inp **00000000** |

| Bit **3** : Nudging command | 100 Inp **00001000** |

Indicate the state of the forced closing on nudging (Setup-up speed). ⇨ INH information
The bit is at **1** when the nudging command is activated.
The bit is at **0** otherwise.

| Bit **2** : Re-opening command | 100 Inp **00000100** |

Indicate the state of the re-opening command (if exist).
The bit is at **1** when the re-opening relay is activatedl.
The bit is at **0** otherwise.

| Bit **1** : Closing command | 100 Inp **00000010** |

Indicate the state of the closing command.
The bit is at **1** when the closing command is activated.
The bit is at **0** otherwise.

| Bit **0** : Opening command | 100 Inp **00000001** |

Indicate the state of the opening command.
The bit is at **1** when the opening command is activated.
The bit is at **0** otherwise.

- Address **10A** : **Inp3**, Bits 0 to 7.

| Bits **0, 1, 2, 3, 4** and **7** : Not used | 10AInp3**00000000** |

Bit **6** : Slow down contact on closing	Bit **5** : Slow down contact on opening
10AInp3**01000000** Programme: **OP15 R 03 – 25/09/00**	10AInp3**00100000** Programme: **OP15 R 03 – 25/09/00**
Indicate the state of the slow down contact on closing. The bit is at **1** when the contact is activated. The bit is at **0** otherwise.	Indicate the state of the slow down contact on opening. The bit is at **1** when the contact is activated. The bit is at **0** otherwise.

OR   **OR**

Bit **6** : State of the beam A	Bit **5** : State of the beam B
10AInp3**01000000** Programme: **OP15 I 00 – 10/04/00**	10AInp3**00100000** Programme: **OP15 I 00 = 10/04/00**
Indicate the state of the beam A on closing. The bit is at **1** when the beam A is cut. The bit is at **0** otherwise.	Indicate the state of the beam B on opening. The bit is at **1** when the beam B is cut. The bit is at **0** otherwise.

DEFINITION OF THE VARIABLES (2/3)

EXPLANATION OF THE OUTPUTS:

- Address **101** : **Out**, Ouptputs 0 to 7.

Bits **1, 4, 5, 6, 7** : Not used

`101 Out 00000000`

Bit **3** : Fault indicator on opening / closing.

`101 Out 00001000`

> Indicate the state of the fault indicator on opening or closing.
> The bit is at **1** when the fault is activate.
> The bit is at **0** otherwise.
>
> Fault Information on Opening or Closing.

Bit **2** : Shunt Relay.

`101 Out 00001000`

> Indicate the state of the shunt relay of filtering capacitor charge.
> The bit is at **1** when the capacitor is loaded.
> The bit is at **0** otherwise.

Bit **0** : State of the re-opening relay

`101 Out 00001000`

> Indicate the state of the relay which gives the re-open signal.
> The bit is at **1** when the relay is activated.
> The bit is at **0** otherwise.

- Address **110** : **Fre,** FREquency used   in Hz or V

> At this address, can be read the Frequency used by the door operator.
>
> In case of D.C. motor, the value read at this address corresponding neither at a Frequency nor a Voltage (Specific conversion Table)

- Address **11A** : **Vmot**, Motor Voltage   in %

> At this address can be read the voltage percent used by the door operator motor.

- Address **122** : **C-MOP**, Current on Maximum OPening   in mA

[ONLY WITH THE PROGRAMME OP15 R XX]

> At this address can be read the maximum current on opening. Warning, this value must be paste at the address **002 after** you've carried the values read at the address **124, 126** and **128** (Closing currents).

- Address **124** : **C_CL01**, Current Closing at the beginning   in mA

[ONLY WITH THE PROGRAMME OP15 R XX]

> At this address can be read the maximum current on closing at the beginning of closing.

DEFINITION OF THE VARIABLES (3/3)

- Address **126** : **C_CL02**, final Current CLosing   in mA

[ONLY WITH THE PROGRAMME OP15 R XX]

At this address can be read the maximum current on closing at the end of closing.

- Address **128** : **C_CL03**, Current CLosing Maximum   in mA

[ONLY WITH THE PROGRAMME OP15 R XX]

At this address can be read the maximum current on closing, when the door normaly work on closing.
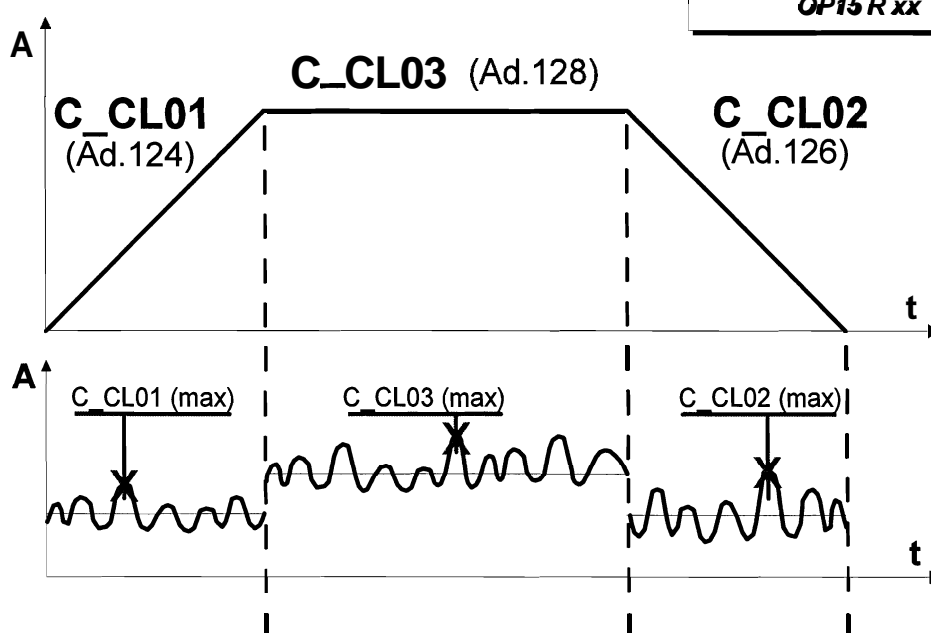
- Address **12A** : **I_Cap1**, Current measuring device 1   in mA

At this address can be read the information given by the current measuring devive, Those should be transfer at the address **002** *[MCO]*page **13**, **006** *[OCOP]* page **13**,**018** *[SCCL]* page **16** and **01A** *[DETERF]* page **16**

Address	002	006	018	IN CASE OF PROGRAMME OP15 R xx 01A
Name	MCO	OCOP	SCCL	DETERF
Value Read	Add. 122	Add. 128	Add. 124	Add. 126

Closing Cycle:

IN CASE OF PROGRAMME *OP15 R xx*

C_CL01 (Ad.124)   C_CL03 (Ad.128)   C_CL02 (Ad.126)

C_CL01 (max)   C_CL03 (max)   C_CL02 (max)

Fault list and Diagnostic.

The fault code list is found at addresses **028, 029, 02A**, **02B**, **02C**, **02D**, **02E**, **02F**, **030** and **031.** At address **028** the most recent fault is recorded and at address **031** the oldest recorded fault.

BEFORE LEAVING THE SITE, SET THE FAULT LIST BACK TO 00. IN THIS WAY YOU CAN KEEP BETTER TRACK OF ANY BREAKDOWNS.

Remember:

If the display blinking, a fault is in progress. This fault can disappear after a time.

Fault 02:

Jamming door on opening

The value of the nominal current on opening of the motor is over after a safety knuckle detection.

This fault can disappear after a time and the operator automatically reset itself.

Fault 22:

Integrator

The door closing time (delay) is over.

Verify the door integrator time (delay) (on page 15).

Fault 90:

Over-Current

Over-current as 1 Ampere.

In fact:

The motor is on short-circuit

- The outputs X, **Y,** Z, of the VVVF are on short-circuit

- A command transistor is faulty